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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,955	03/31/2000	George H. BuAbbud	560043610132	1921

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EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 08/11/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/540,955	BUABBUD ET AL.	
	Examiner	Art Unit	
	Shi K. Li	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,4,6,7 and 10-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,4,6,7 and 10-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 3-4, 6-7, 10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al. (U.S. Patent 5,459,607) in view of Neidlinger et al. (U.S. Patent 5,491,575) and Kim (U.S. Patent 5,719,904).

Fellows et al. discloses in FIG. 1A and FIG. 1B a digital fiber transmission system comprising a local interface (first location) 2 and a remote location (second location) 4. The local interface transmits a Manchester coded signal having a first clocking frequency to remote location over an optical fiber using a wavelength. The remote location receives the signal and recovers the signal. The remote location converts a NRZ data to Manchester coded of second clock frequency and transmits the second Manchester signal to local interface over the same fiber using same wavelength (see col. 1, lines 39-40). Fellows et al. teaches to use 10 MHz for first clock frequency and 200 MHz for second clock frequency (see col. 5, lines 5-9). The local interface receives the second Manchester signal and converts it to NRZ. Regarding claims 3, 7 and 12-20, the difference between Fellows et al. and the claimed invention are (a) Fellows et al. does not transmits NRZ from local interface to remote location and (b) Fellows et al. does not include three (3) pulses for each data bit and use majority voting to determine the value of a received bit.

Neidlinger et al. teaches in FIG. 1 a system for transmitting bi-directional communication data over an optical fiber. Neidlinger et al. teaches to transmit NRZ

(baseband) signal in one direction and PSK (equivalent to Manchester) modulated signal in the other direction. This allows the use of high-pass filter and low-pass filter at the receiver side to filter out noise due to crosstalk. One of ordinary skill in the art would have be motivated to combine the teaching of Neidlinger et al. with the digital fiber transmission system of Fellows et al. because NRZ (baseband) signal and high speed Manchester signal have very little overlap in frequency spectrum and the approach of Neidlinger et al. further reduces crosstalk between signals of different directions. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit NRZ from local interface to remote location, as taught by Neidlinger et al., in the digital fiber transmission system of Fellows et al. because crosstalk between NRZ and high frequency Manchester is small.

Majority voting is a well-known simple error correction mechanism. Kim teaches in col. 1, lines 43-51 the basic concept of majority voting. One of ordinary skill in the art would have been motivated to combine the teaching of Kim with the modified bi-directional communication system of Fellows et al. and Neidlinger et al. because majority voting is a simple method for reducing errors. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use majority voting method, as taught by Kim, in the modified bi-directional communication system of Fellows et al. and Neidlinger et al. because majority voting is a simple method for reducing errors.

Regarding claim 4, Fellows et al. teaches a first clocking frequency of 10 MHz and Neidlinger et al. teaches a first clocking frequency of 70 MHz (see col. 4, lines 50-51 of Neidlinger et al.). It is obvious to one of ordinary skill in the art to choose any

frequency in the range 10 MHz~70 MHz, e.g., 25 MHz, in the modified bi-directional communication system of Fellows et al., Neidlinger et al. and Kim.

Regarding claims 6 and 10, Neidlinger et al. includes low pass filter TP in the central station and low pass filter LP in the decentralized station.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al., Neidlinger et al. and Kim as applied to claims 3-4, 6-7, 10 and 12-20 above, and further in view of Watanabe (U.S. Patent 5,896,211).

Fellows et al., Neidlinger et al. and Kim have been discussed above in regard to claims 3-4, 6-7, 10 and 12-20 above. Neidlinger et al. includes high pass filter in the second station between the modulator and the laser diode and band-pass filter BP in the first station between the photodiode and the discriminator. The difference between the modified communication system and method of Fellows et al., Neidlinger et al. and Kim and the claimed invention is that Neidlinger et al. uses high pass filter in the second station while the claimed invention uses band pass filter. Watanabe teaches in FIG. 10 the use of band pass filter after the modulation. It is well known in the art that the spectrum of a modulated signal is practically band limited. Using a band pass filter blocks noise outside the signal spectrum. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a band pass filter instead of the high pass filter, as taught by Watanabe, in the modified communication system and method of Fellows et al., Neidlinger et al. and Kim because a band pass filter blocks noise outside the signal spectrum.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al. (U.S. Patent 5,459,607) in view of Neidlinger et al. (U.S. Patent 5,491,575).

Fellows et al. discloses in FIG. 1A and FIG. 1B a digital fiber transmission system comprising a local interface (first location) 2 and a remote location (second location) 4. The local interface transmits a Manchester coded signal having a first clocking frequency to remote location over an optical fiber using a wavelength. The remote location receives the signal and recovers the signal. The remote location converts a NRZ data to Manchester coded of second clock frequency and transmits the second Manchester signal to local interface over the same fiber using same wavelength (see col. 1, lines 39-40). Fellows et al. teaches to use 10 MHz for first clock frequency and 200 MHz for second clock frequency (see col. 5, lines 5-9). The local interface receives the second Manchester signal and converts it to NRZ. The difference between Fellows and the claimed invention is that Fellows et al. does not transmits NRZ from local interface to remote location.

Neidlinger et al. teaches in FIG. 1 a system for transmitting bi-directional communication data over an optical fiber. Neidlinger et al. teaches to transmit NRZ (baseband) signal in one direction and PSK (equivalent to Manchester) modulated signal in the other direction. This allows the use of high-pass filter and low-pass filter at the receiver side to filter out noise due to crosstalk. One of ordinary skill in the art would have motivated to combine the teaching of Neidlinger et al. with the digital fiber transmission system of Fellows et al. because NRZ (baseband) signal and high speed Manchester signal have very little overlap in frequency spectrum and the approach of Neidlinger et al. further reduces crosstalk between signals of different directions. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit NRZ from local interface to remote location, as taught by Neidlinger et

al., in the digital fiber transmission system of Fellows et al. because crosstalk between NRZ and high frequency Manchester is small.

Response to Arguments

5. Applicant's arguments filed on 1 June 2004 have been fully considered but they are not persuasive.

Applicant argues that the rejection is improper because Neidlinger teaches away from the claimed inventions. The Examiner disagrees. The Applicant misapprehends what it means to "teach away" from a patented invention. In general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. In re Gurley, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). Neidlinger uses a WDM device to separate signals in difference direction. However, Neidlinger does not teach or suggest that using the same wavelength for both directions will not work. Therefore, Neidlinger does not teach away from the invention.

Applicant argues that Fellows also teaches away from the claimed inventions. The Examiner disagrees. The Applicant misapprehends again what it means to "teach away" from a patented invention. Fellows uses Manchester encoding in both directions. However, Fellows does not teach or suggest that Manchester encoding must be used in both directions. In fact, any judgement on obviousness necessarily modifies the teaching of prior art. But so long as a reference does not suggest that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant, it is not teach away.

Finally, in response to applicant's argument that there is no suggestion to combine Fellows and Neidlinger, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Neidlinger et al. teaches to derive a carrier frequency for upstream signal from downstream signal, therefore enables a simple clock regeneration or resynchronization (see col. 2, lines 48-49). Neidlinger et al. further teaches to use a NRZ baseband signal for downstream to assure a reliable clock regeneration (see col. 2, line 66-col. 3 line 2). Fellows suggests in FIG. 2 that the overlapping of upstream and downstream traffic is minimized if NRZ is used for low speed clock frequency and Manchester is used for high speed clock frequency. The suggestion of Fellows et al. becomes stronger or is confirmed if viewed together with Neidlinger et al. Therefore, both Neidlinger et al. and Fellows suggest to use NRZ for low speed clock frequency; and it is obvious for one of ordinary skill in the art to combine Neidlinger et al. and Fellows et al., and further with Kim and other appropriate cited references, to construct the claimed inventions.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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